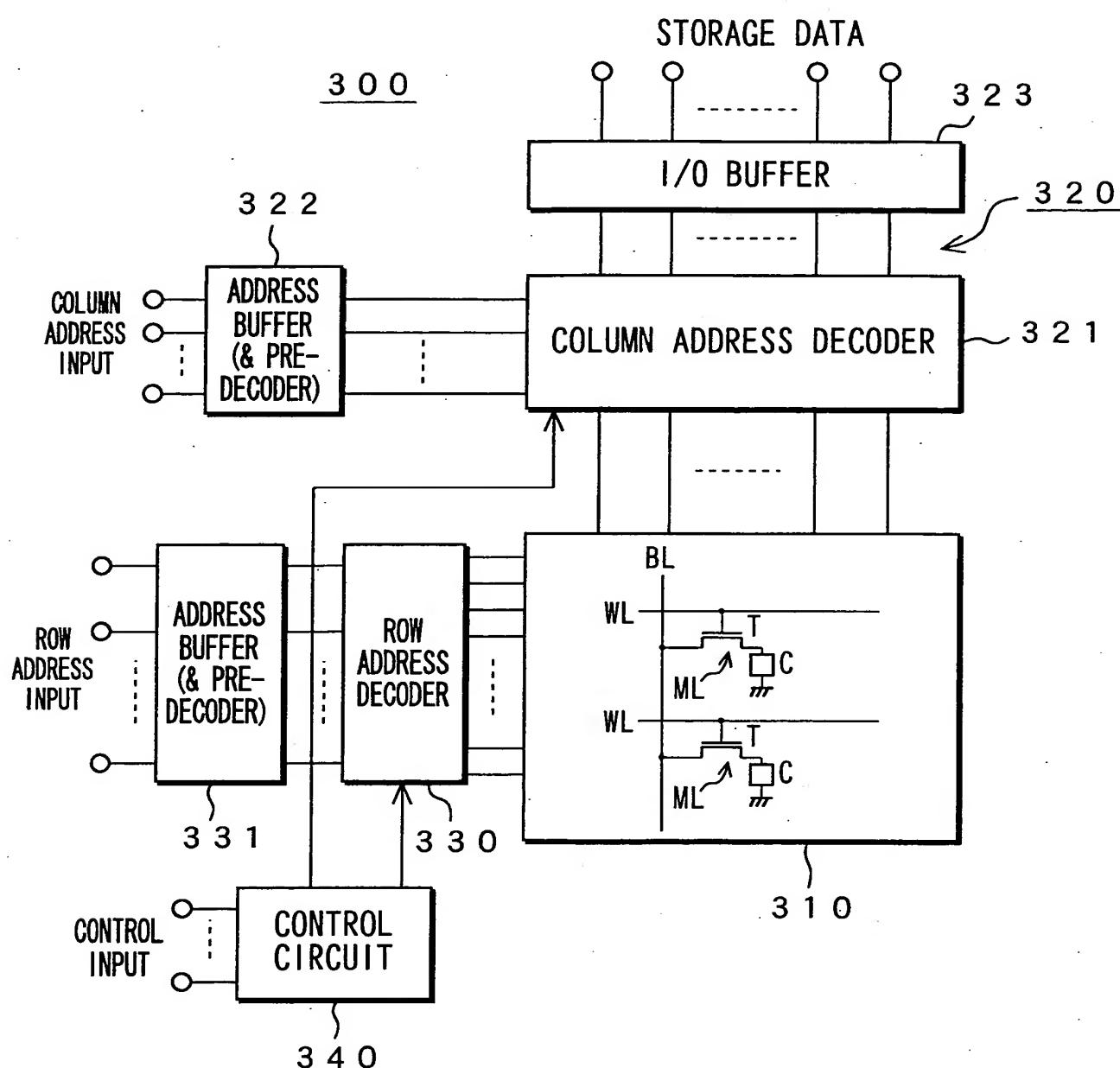


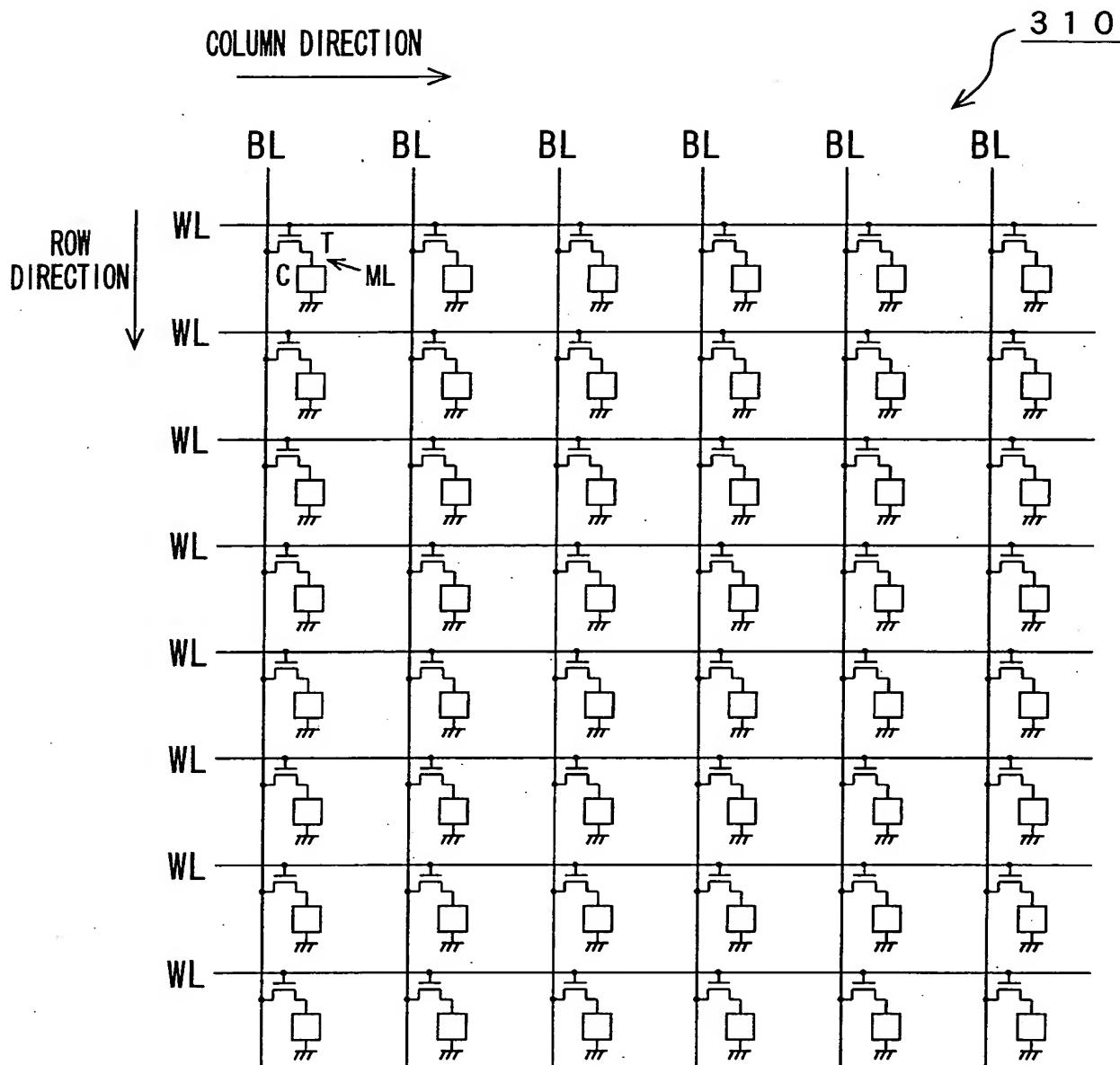
1 / 2 3

F I G . 1



2 / 2 3

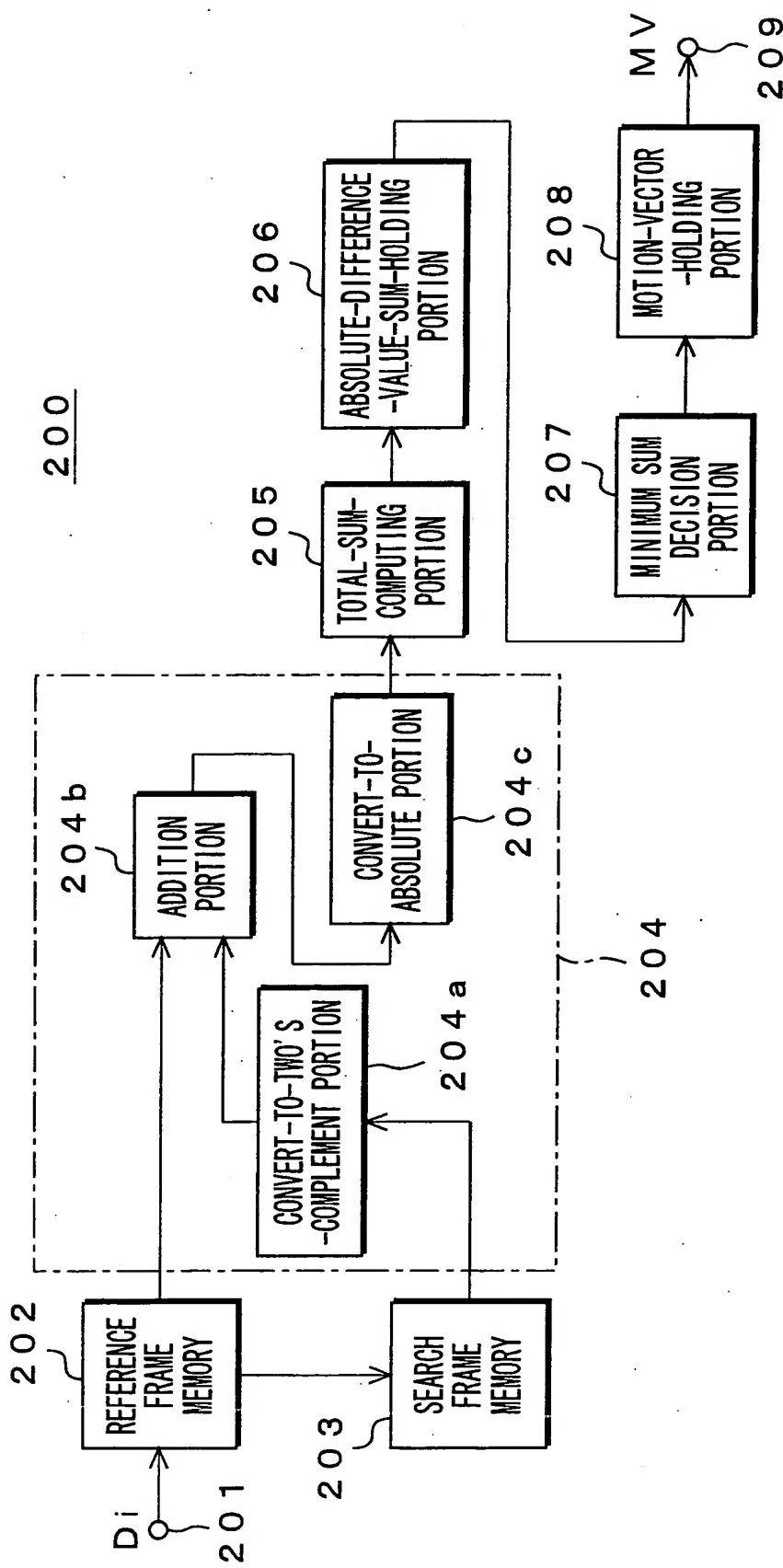
F I G . 2



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FIG. 3



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4 / 2 3

START

ST 2 1

F I G. 4

ST 2 2

READ SEARCH FRAME IMAGE SIGNAL FROM REFERENCE FRAME MEMORY
AND WRITE IT TO SEARCH FRAME MEMORY

INPUT REFERENCE FRAME IMAGE SIGNAL AND
WRITE IT TO REFERENCE FRAME MEMORY

ST 2 3

READ REFERENCE BLOCK DATA

ST 2 4

READ CANDIDATE BLOCK DATA

ST 2 5

PERFORM CONVERSION INTO TWO'S COMPLEMENT

ST 2 6

PERFORM ADDITION

ST 2 7

PERFORM CONVERSION INTO ABSOLUTE VALUE

ST 2 8

COMPUTE SUM

ST 2 9

HOLD SUM OF ABSOLUTE DIFFERENCE VALUES

ST 3 0

HAS PROCESSING ENDED FOR
WHOLE SEARCH RANGE ?

NO

YES

DECIDE MINIMUM SUM

ST 3 2

HOLD MOTION VECTOR

ST 3 3

NO

HAS PROCESSING ENDED FOR
ALL REFERENCE BLOCKS ?

ST 3 4

YES

OUTPUT MOTION VECTORS

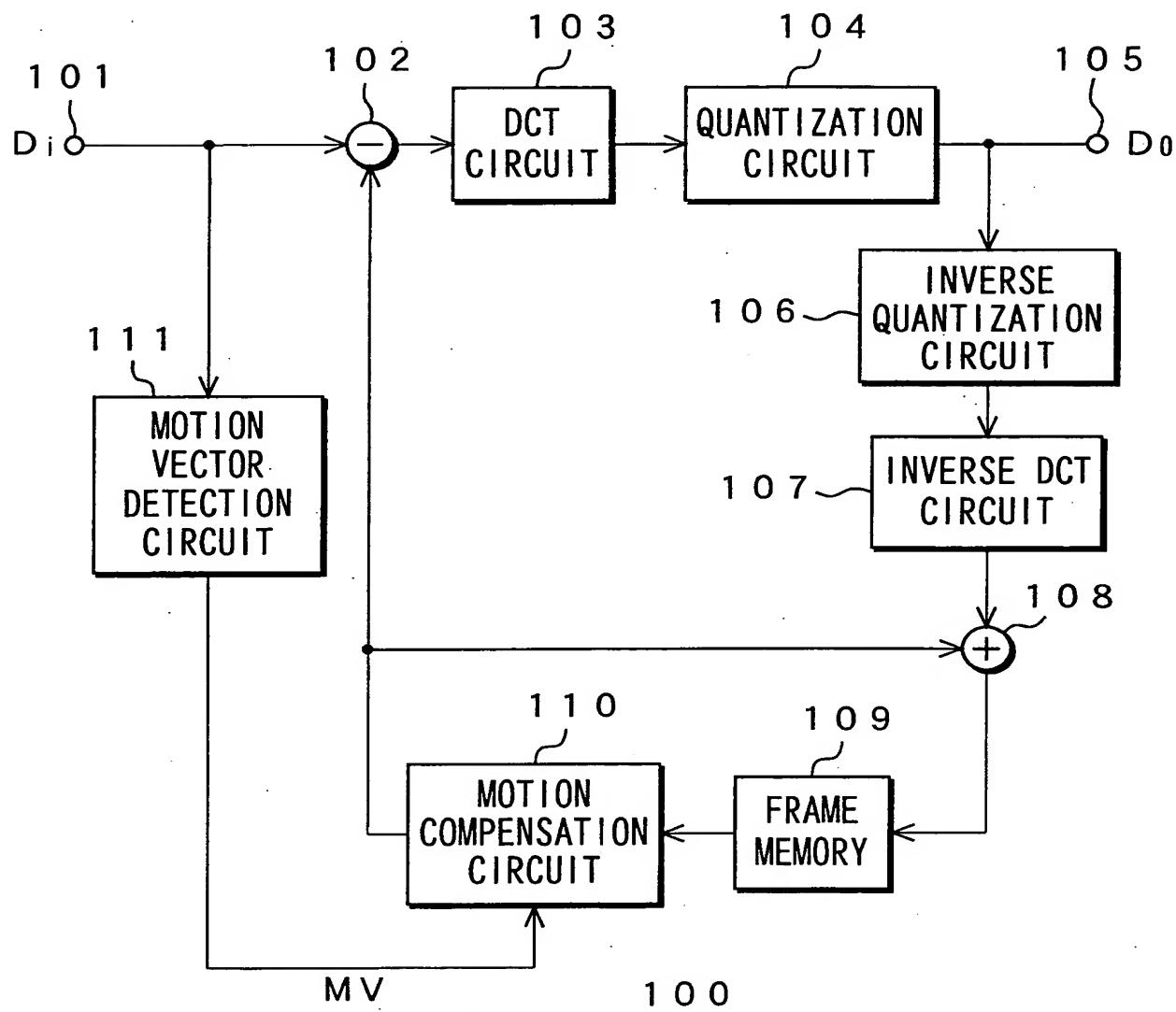
ST 3 5

END

ST 3 6

5 / 2 3

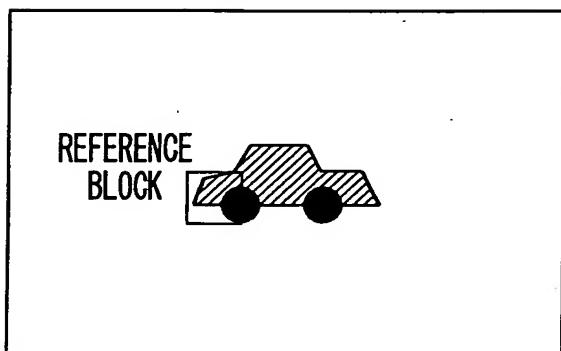
F I G. 5



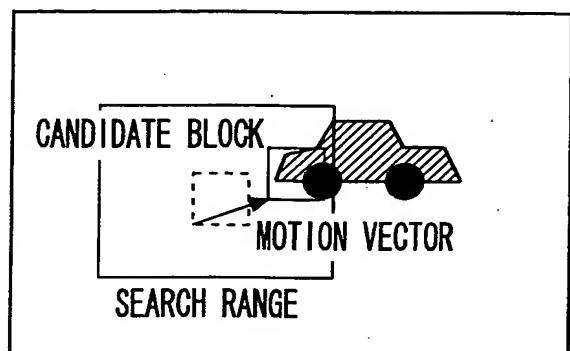
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6 / 2 3

F I G . 6

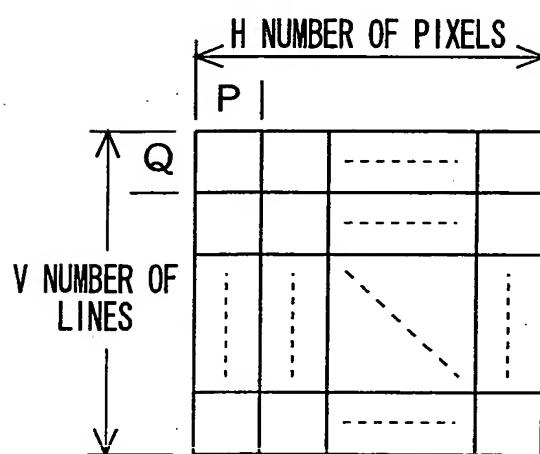


REFERENCE FRAME

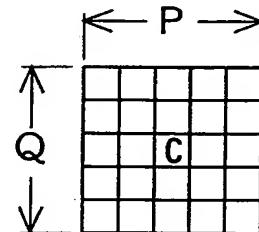


SEARCH FRAME

F I G . 7 A



F I G . 7 B



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FIG. 8A

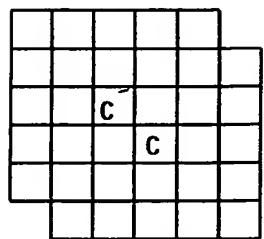


FIG. 8B

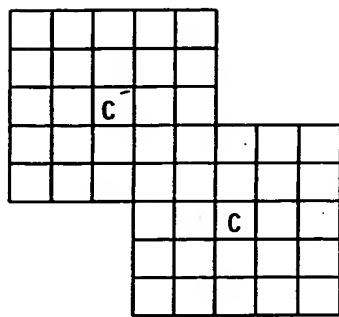


FIG. 8C

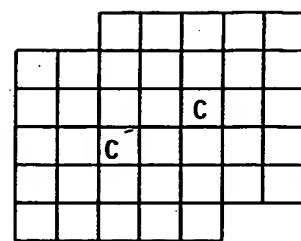
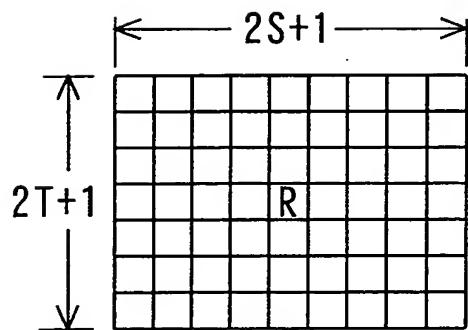
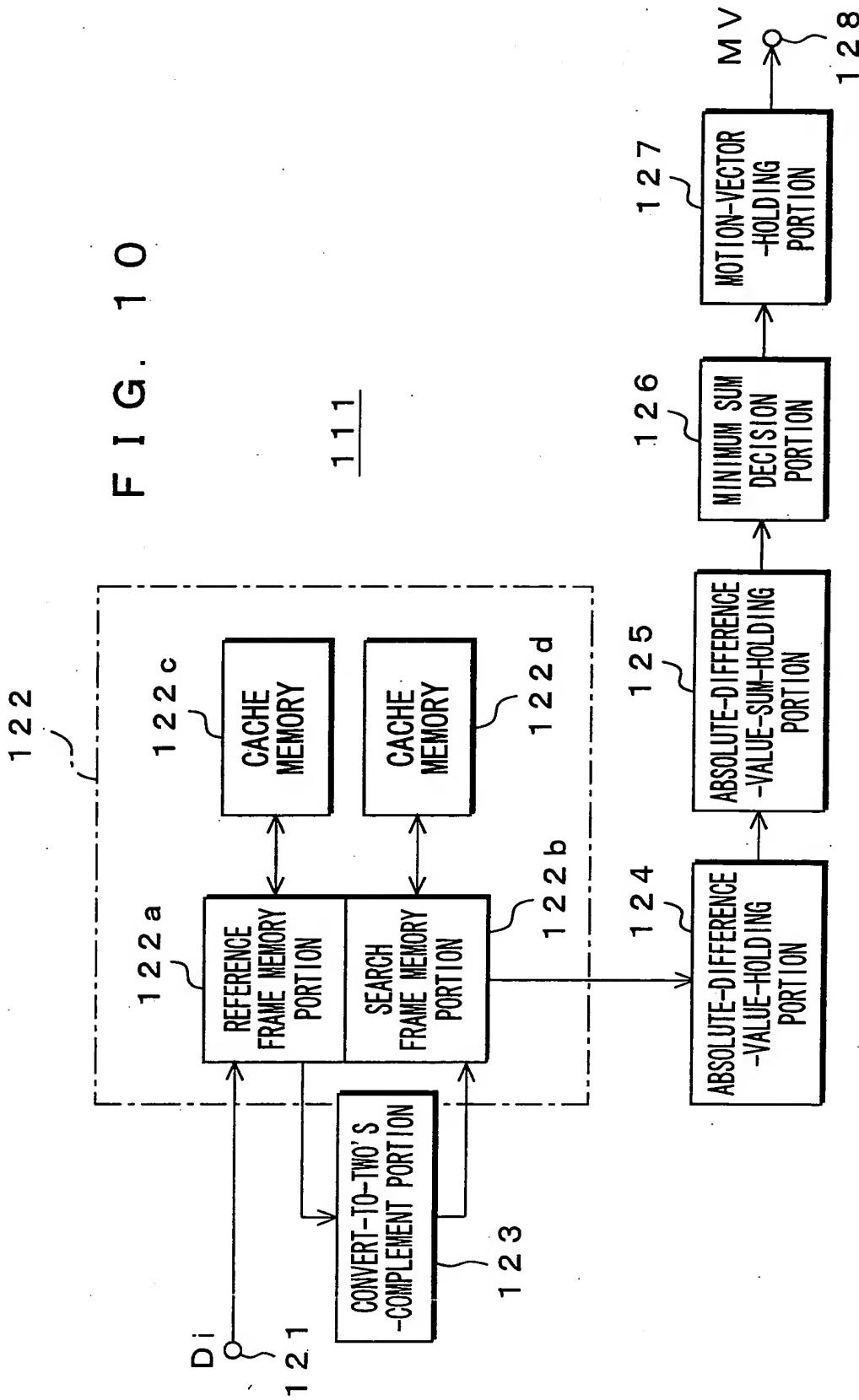


FIG. 9



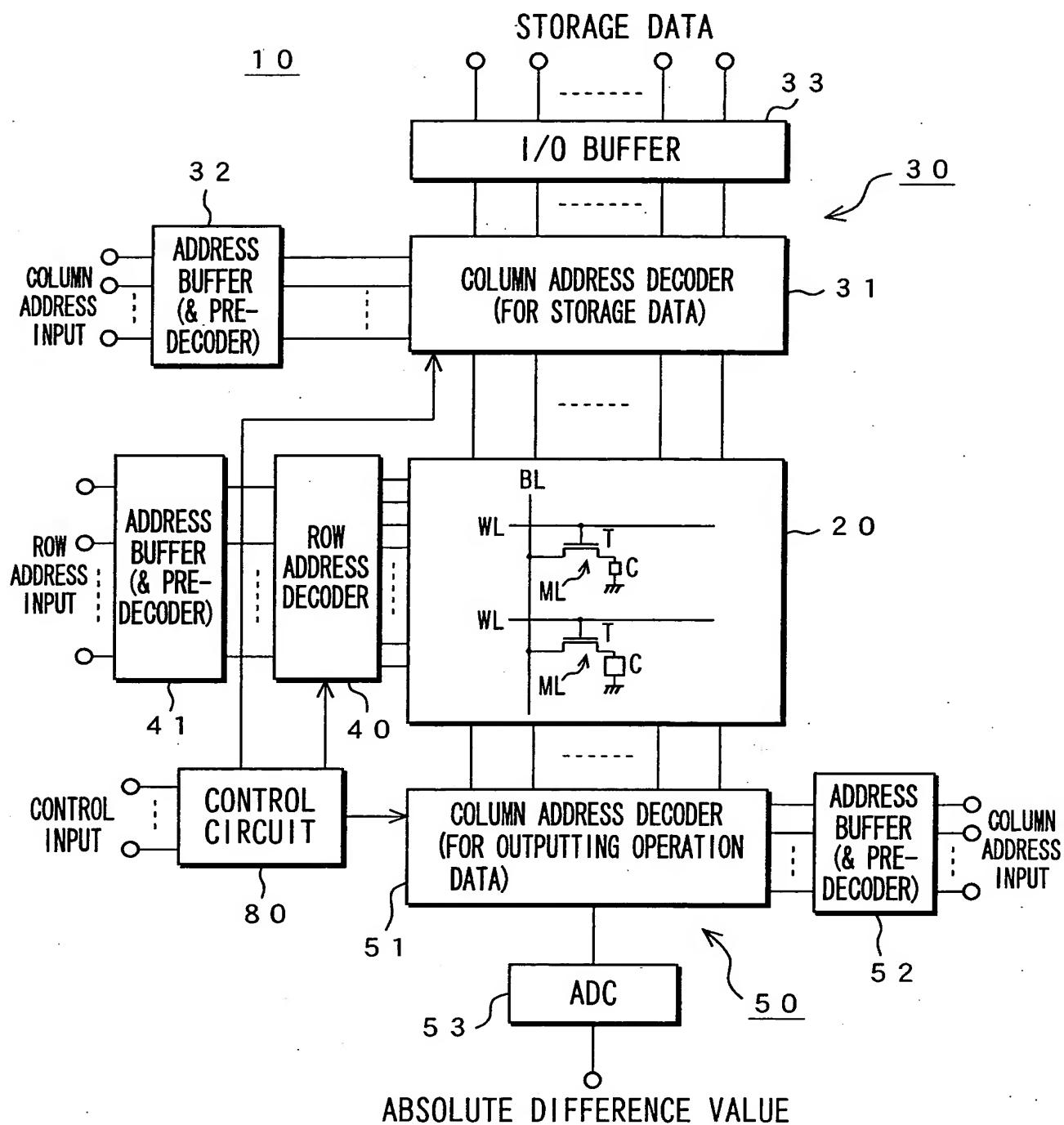
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FIG. 10



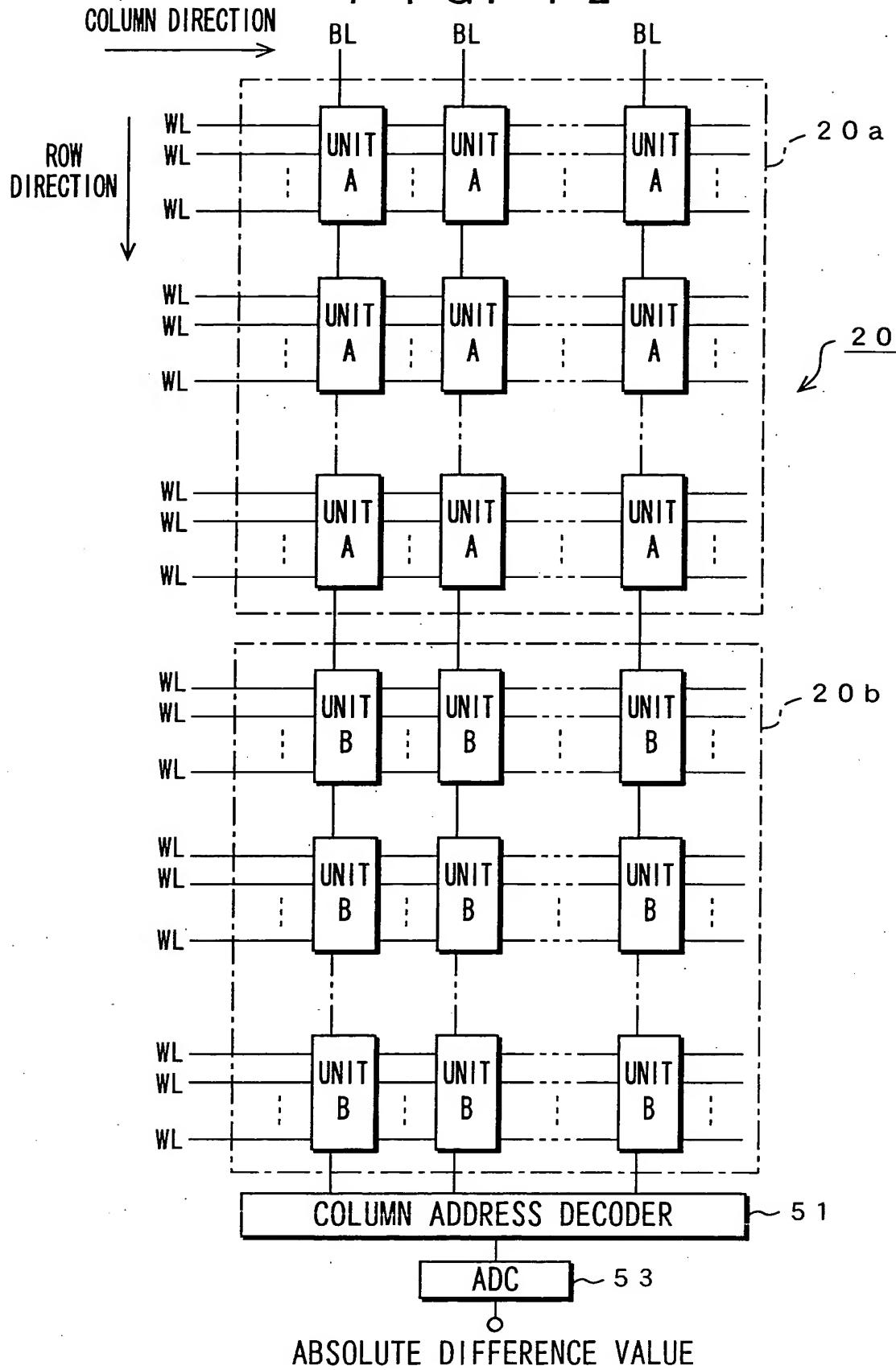
9 / 2 3

F I G . 1 1



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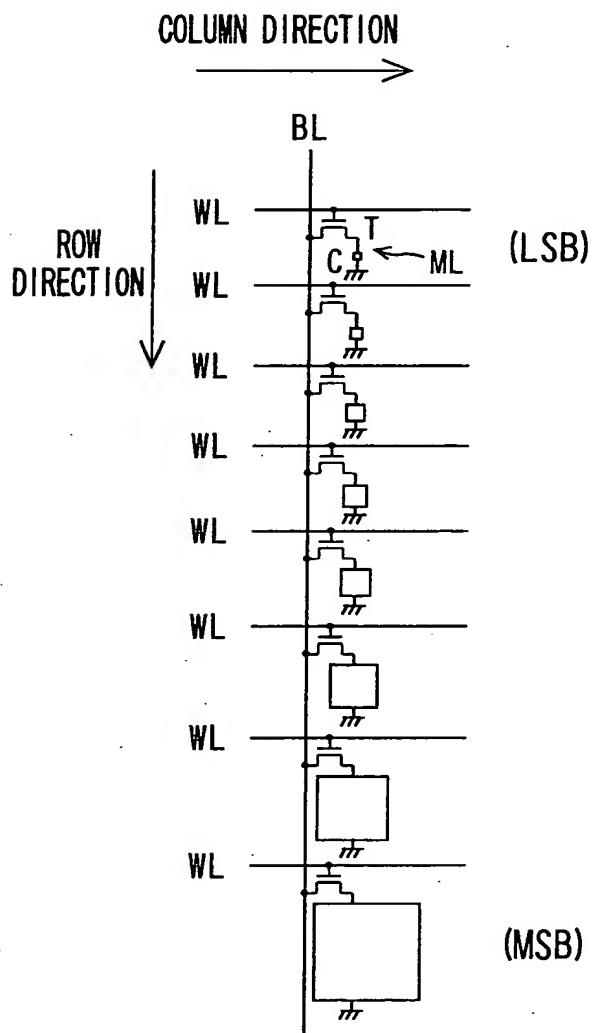
F I G . 1 2



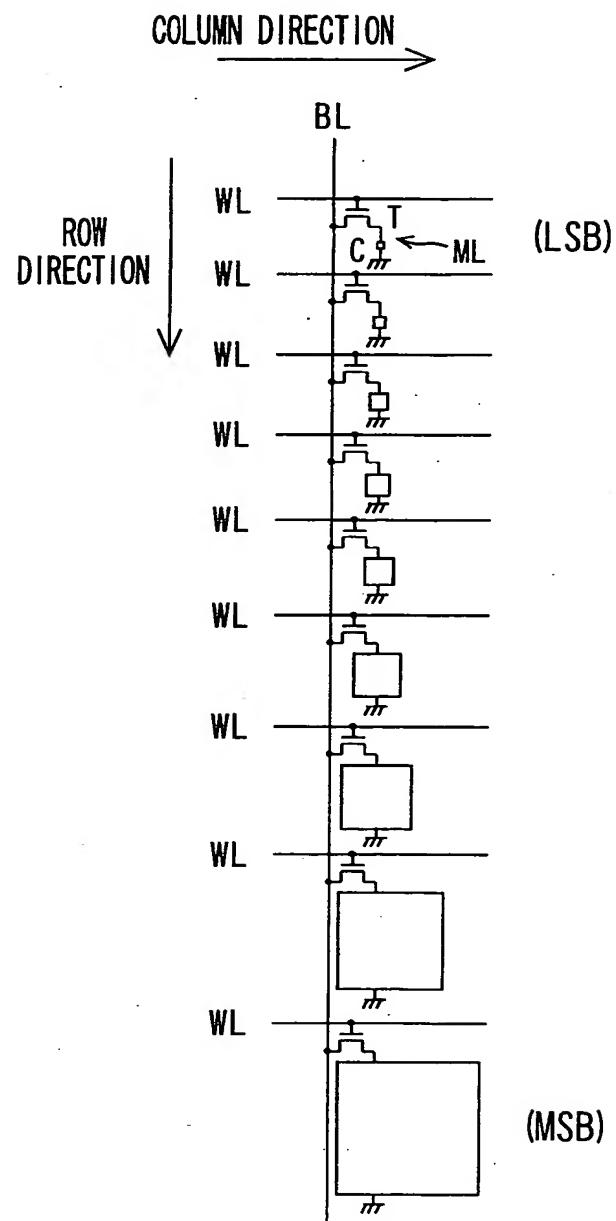
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FIG. 13A

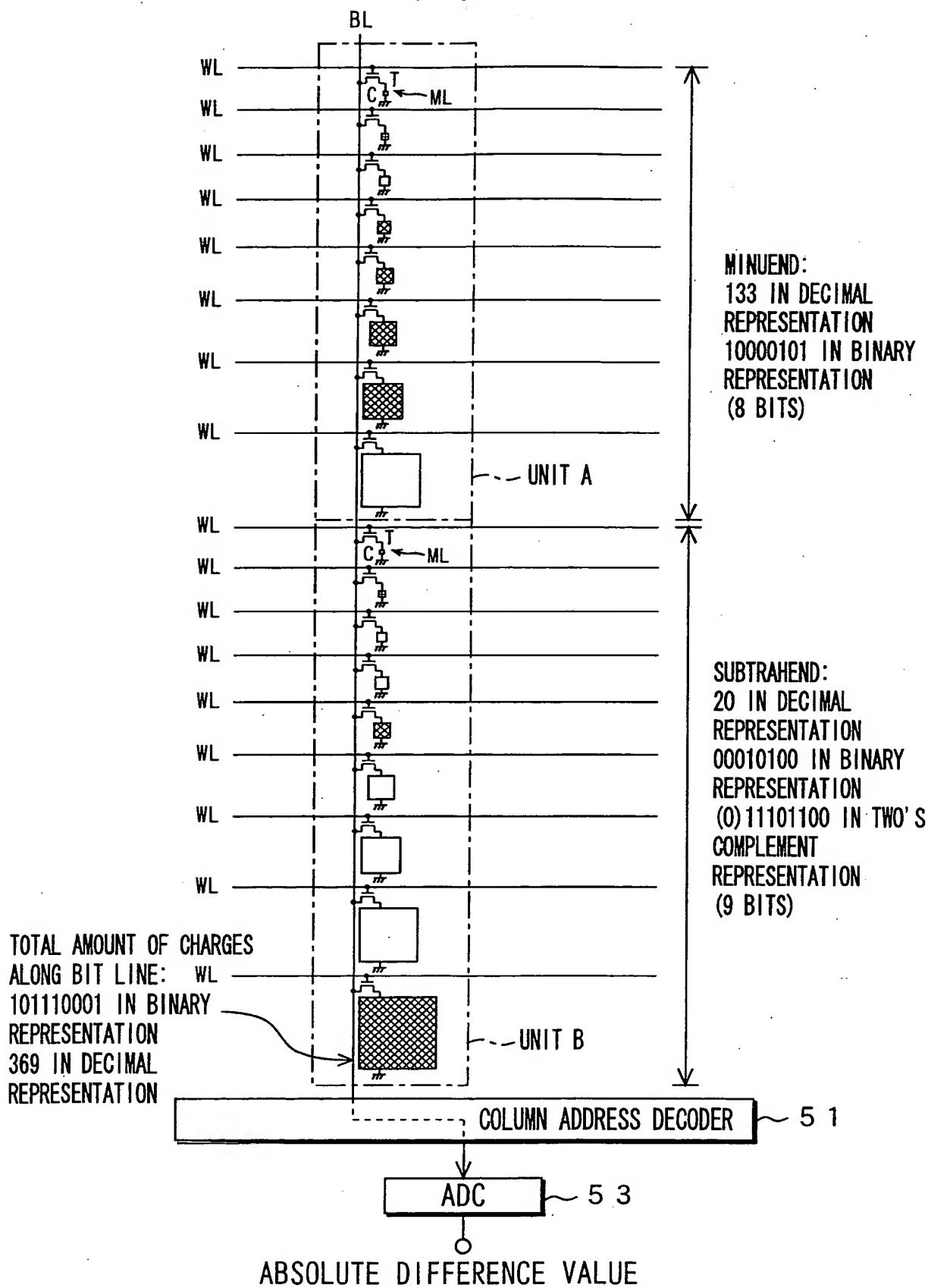


F I G. 13B



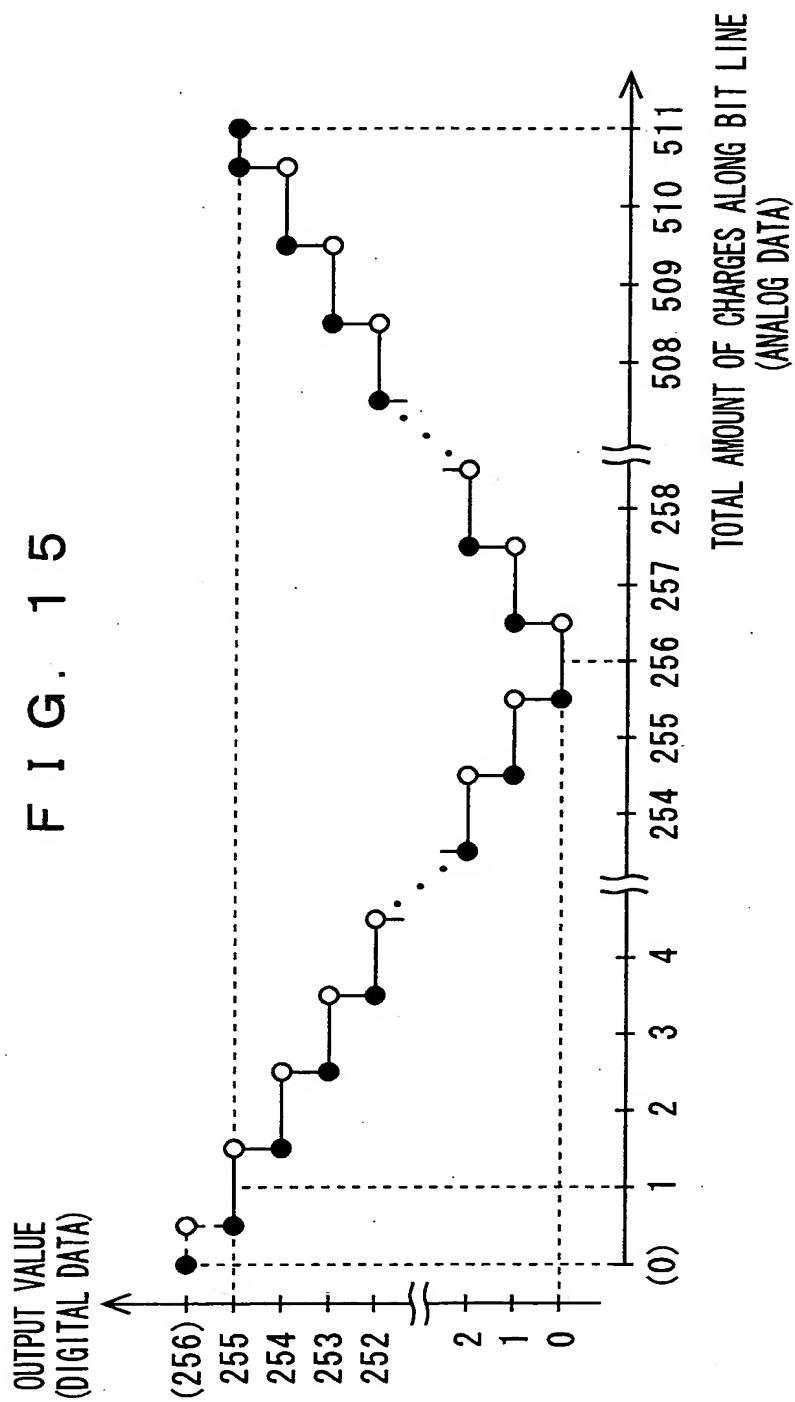
1 2 / 2 3

FIG. 14



1 3 / 2 3

FIG. 15

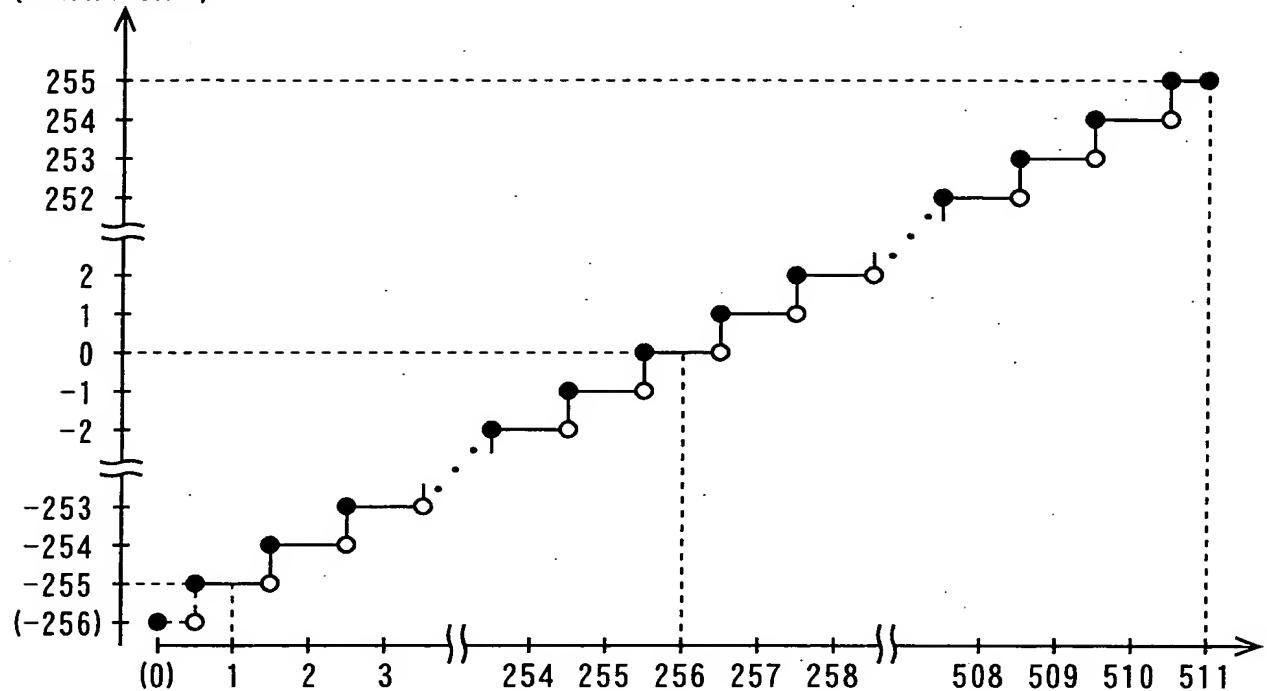


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1 4 / 2 3

F I G . 1 6

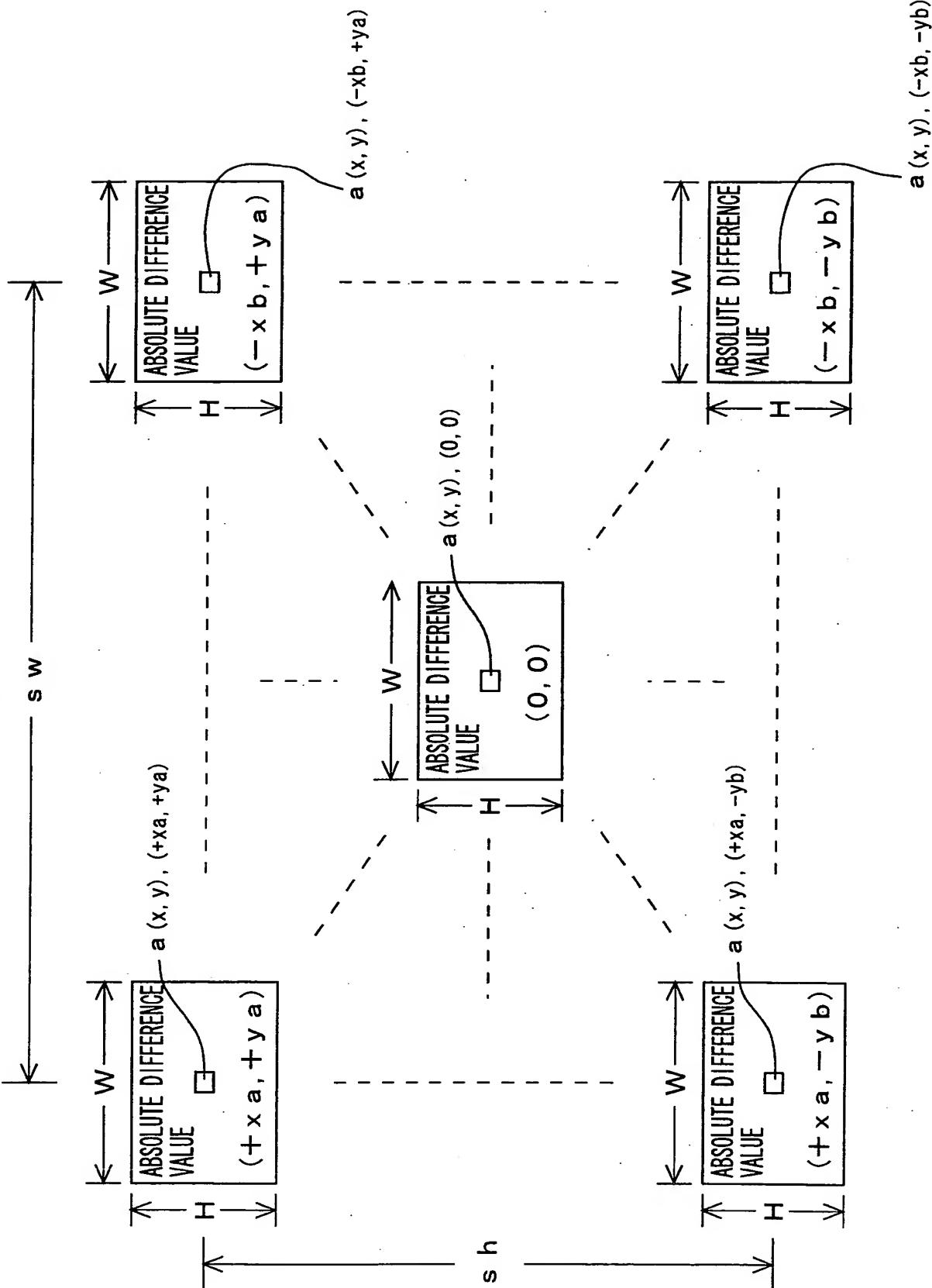
OUTPUT VALUE
(DIGITAL DATA)



TOTAL AMOUNT OF CHARGES ALONG BIT LINE
(ANALOG DATA)

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FIG. 17

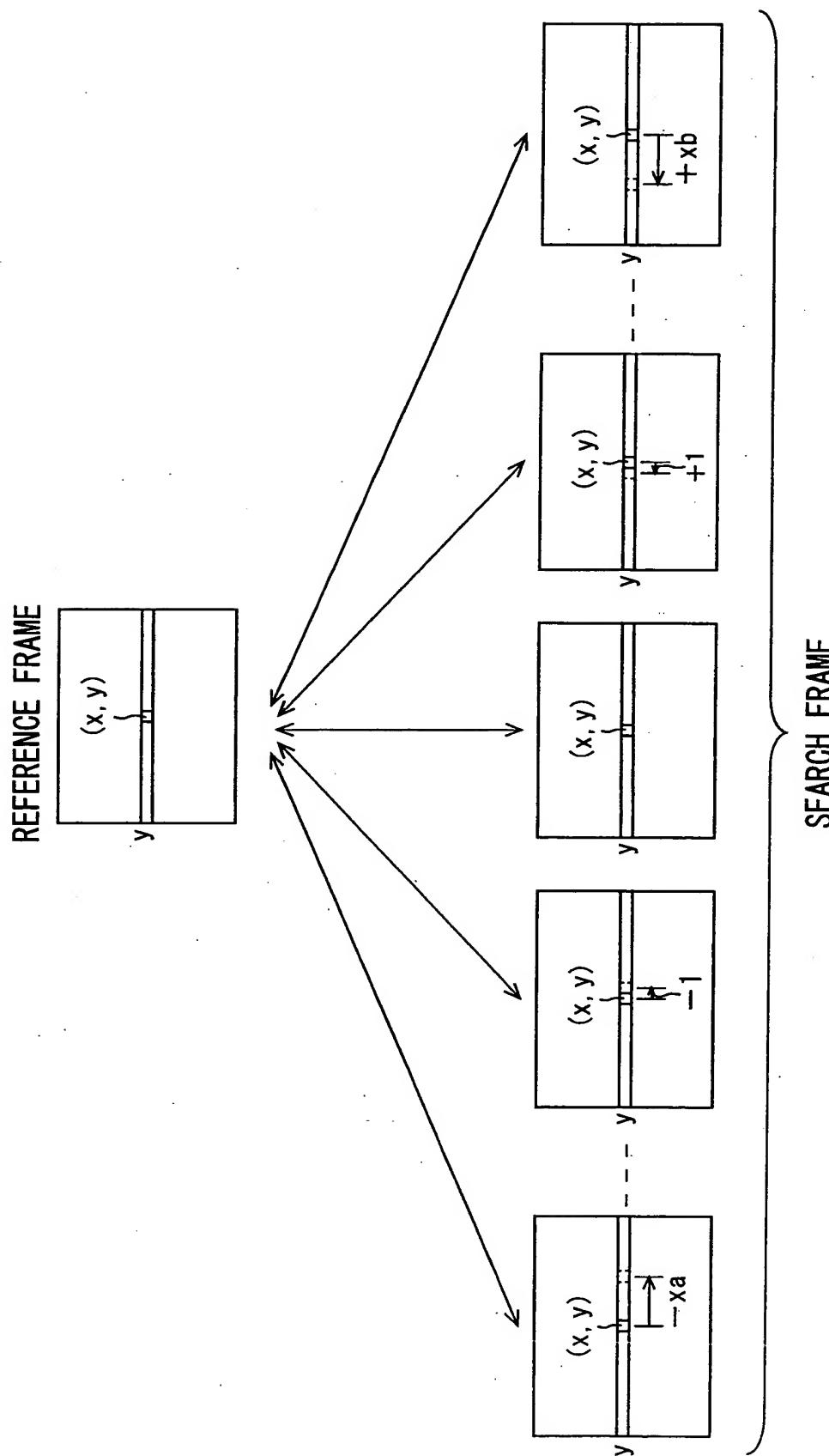


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DOCKET # 27031316 SHEET 16 OF 23

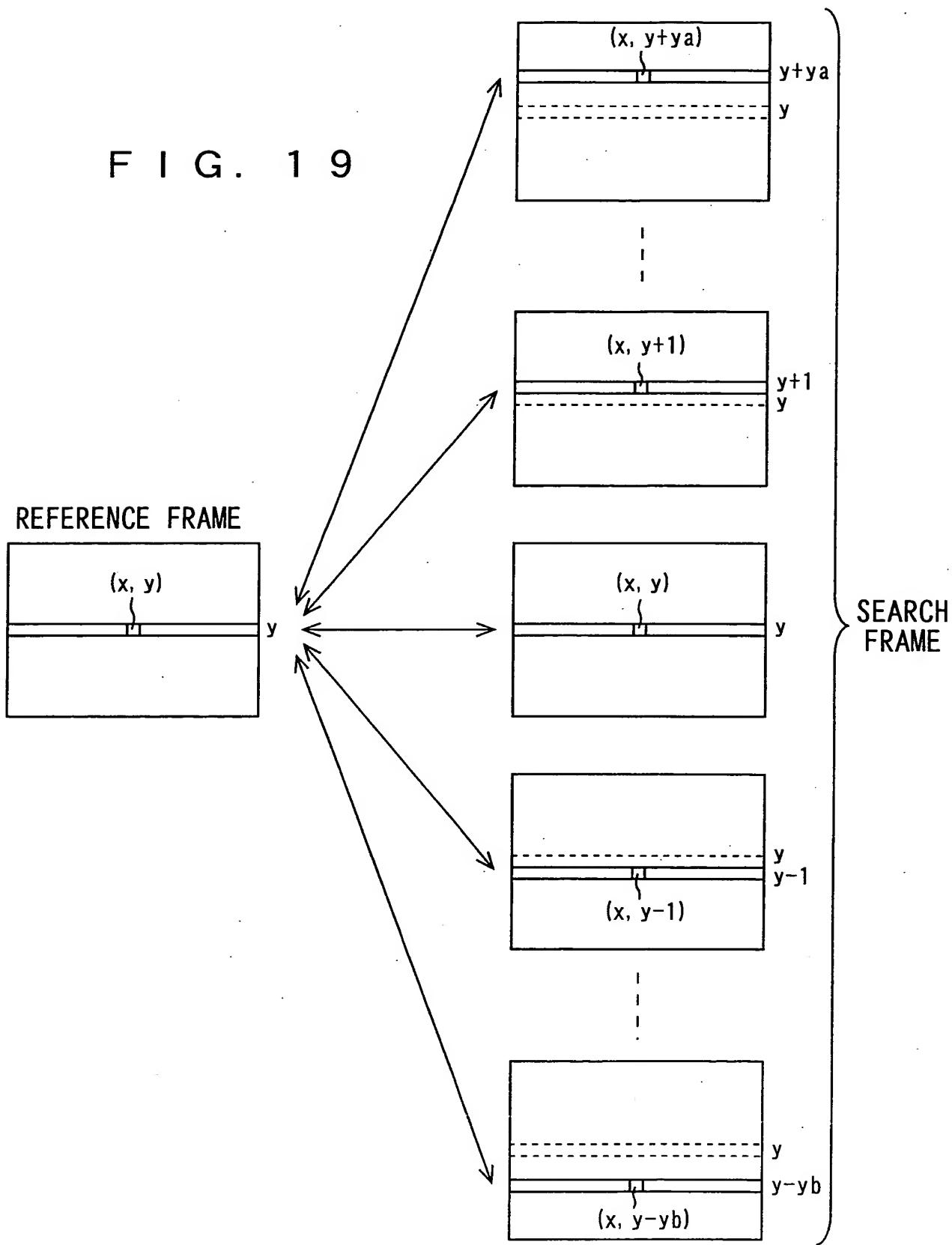
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FIG. 18



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FIG. 19

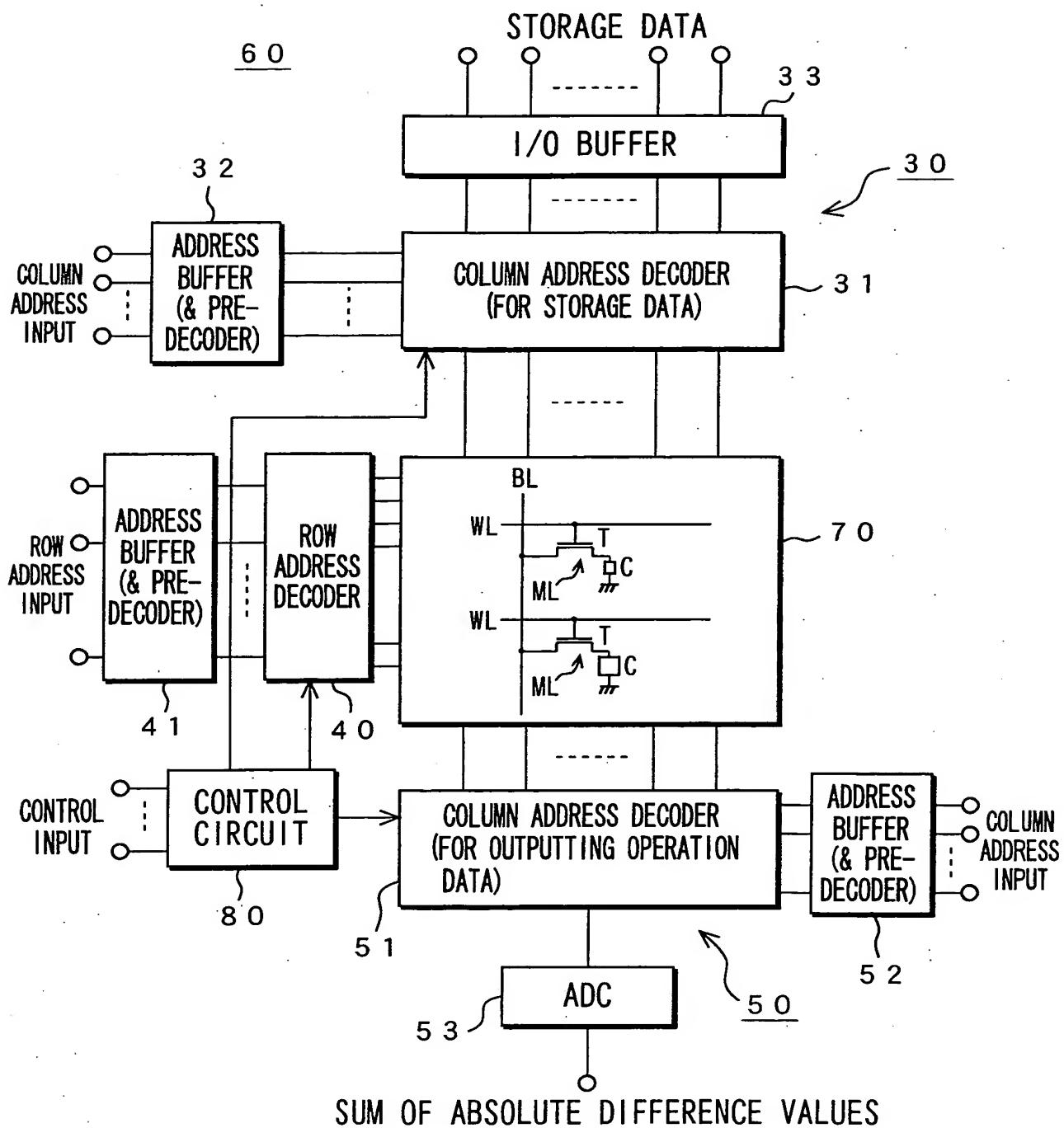


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OBLON ET AL (703) 413-3000
DOCKET # 27031345 SHEET 18 OF 23

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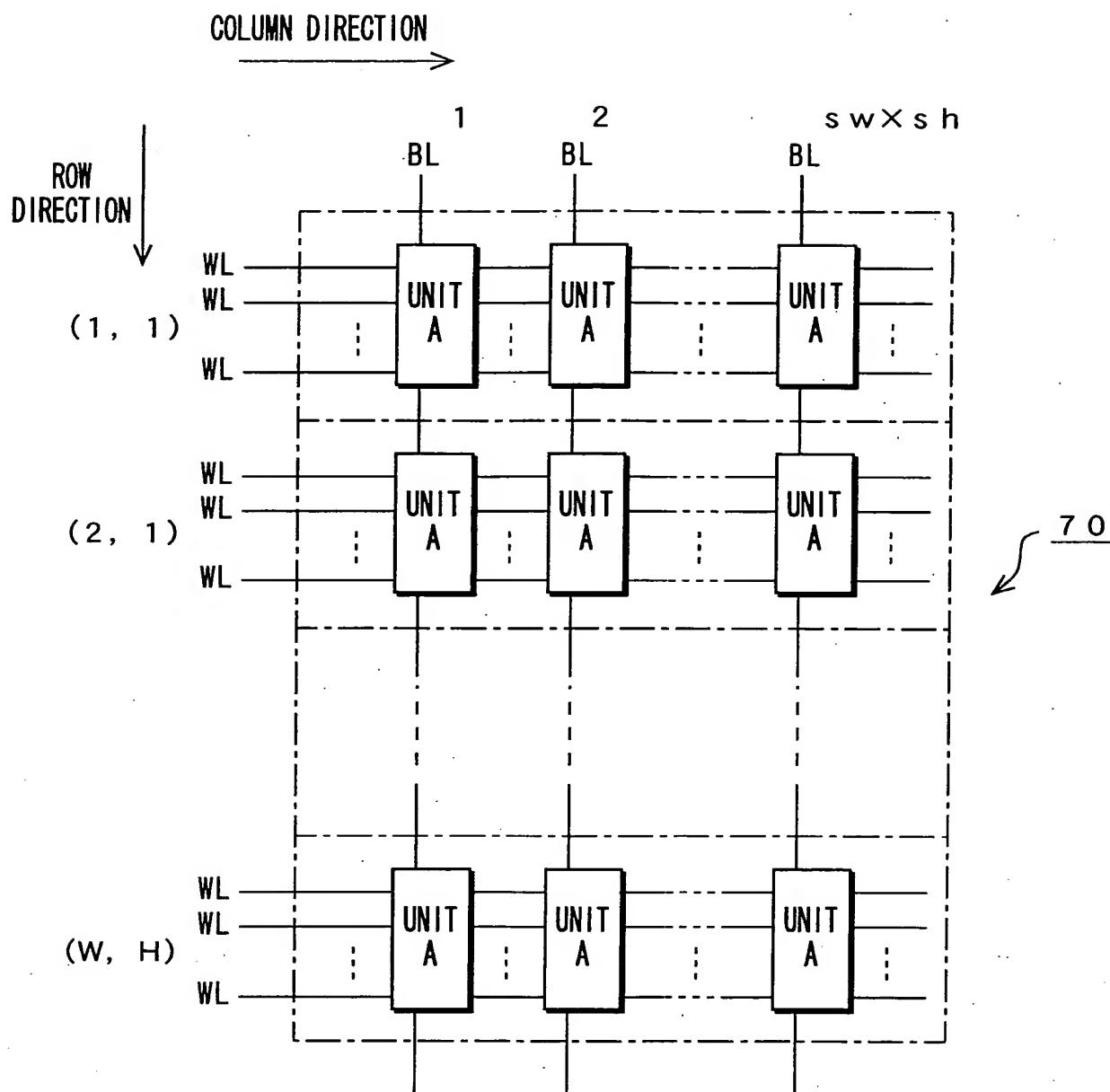
FIG. 20



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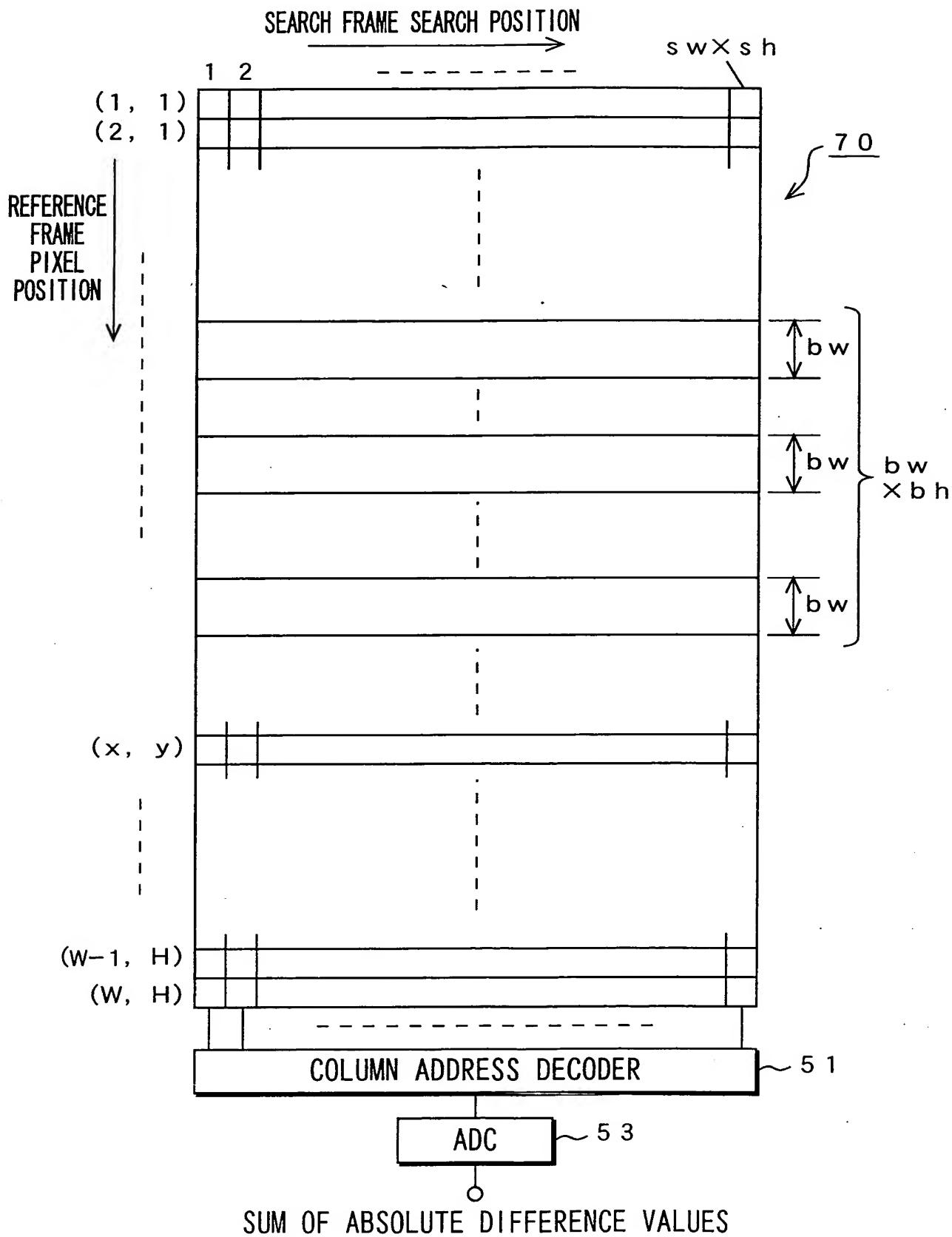
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FIG. 21



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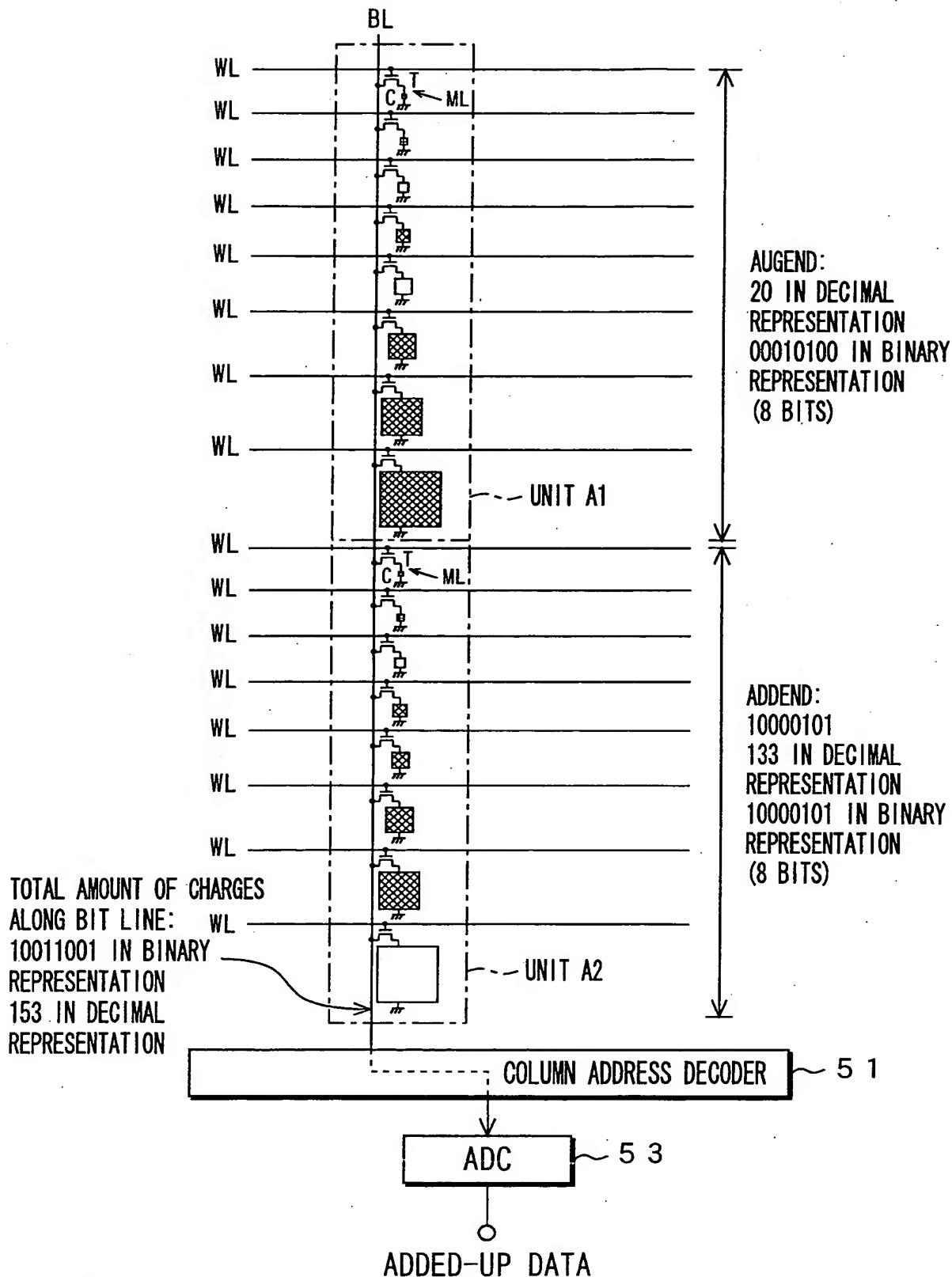
F I G . 2 2

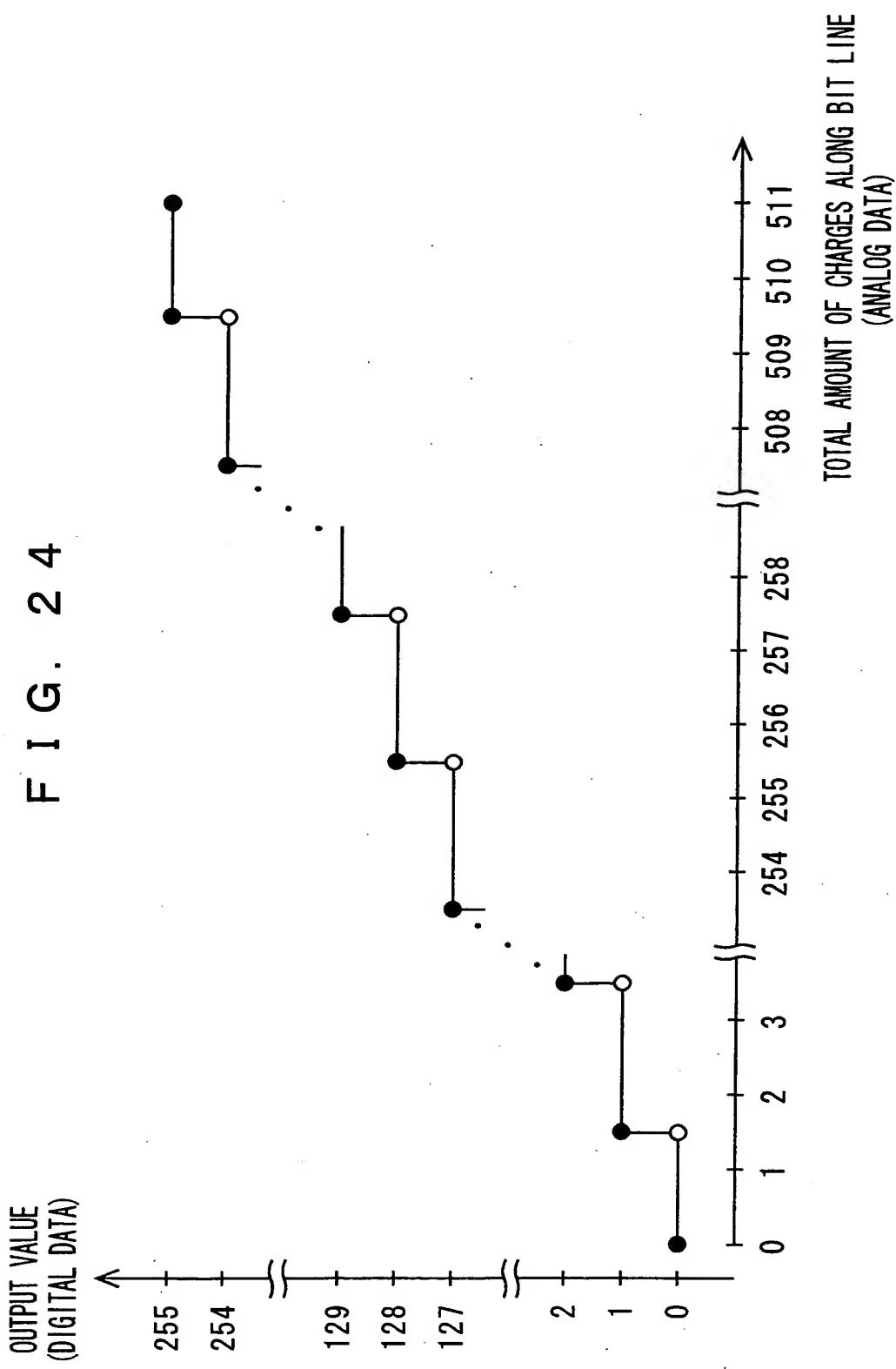


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F I G . 2 3





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START

ST 1

F I G. 25

ST 2

READ SEARCH FRAME IMAGE SIGNAL FROM REFERENCE FRAME MEMORY PORTION
AND CONVERT IT INTO TWO'S COMPLEMENT FORMAT DATA AND WRITE IT TO
SEARCH FRAME MEMORY PORTION

INPUT REFERENCE FRAME IMAGE SIGNAL AND
WRITE IT TO REFERENCE FRAME MEMORY PORTION

ST 3

READ REFERENCE LINE DATA AND SEARCH LINE
DATA AND SAVE THEM IN CACHE MEMORIES

ST 4

ST 5

READ REFERENCE LINE DATA AND SEARCH LINE DATA SIMULTANEOUSLY,
TO OBTAIN ABSOLUTE DIFFERENCE VALUE AND HOLD IT

WRITE REFERENCE LINE DATA SAVED IN CACHE MEMORY BACK
TO REFERENCE FRAME MEMORY PORTION

ST 6

ST 7

HORIZONTALLY MOVE STORAGE POSITION OF SEARCH LINE DATA SAVED IN
CACHE MEMORY, TO WRITE IT BACK TO SEARCH FRAME MEMORY PORTION

ST 8

NO

HAS PROCESSING ENDED FOR ALL SEARCH LINES ?

YES

ST 9

NO

HAS PROCESSING ENDED FOR ALL REFERENCE LINES ?

YES

ST 10

OBTAIN SUM OF ABSOLUTE DIFFERENCE VALUES BETWEEN REFERENCE BLOCK DATA
AND EACH OF CANDIDATE BLOCK DATA IN SEARCH RANGE FROM ABSOLUTE
-DIFFERENCE-VALUE-HOLDING PORTION SEQUENTIALLY AND HOLD IT

DECIDE MINIMUM SUM

ST 11

HOLD MOTION VECTOR

ST 12

ST 13

NO

HAS PROCESSING ENDED FOR ALL REFERENCE BLOCKS ?

YES

OUTPUT MOTION VECTORS

ST 14

END

ST 15